# ELECTRICAL TRADE
# INCORRECT BREAKER INSTALLATION

## PROJECT OVERVIEW

A commercial building hired an electrical contractor to determine why breakers kept tripping during normal usage.

## ELECTRICAL BREAKER INSTALLATION ISSUES

When the electrical contractor tested the circuits, it was determined there was too much load on each circuit.

- The contractor suggested adding additional electric service lines to handle some of the load.

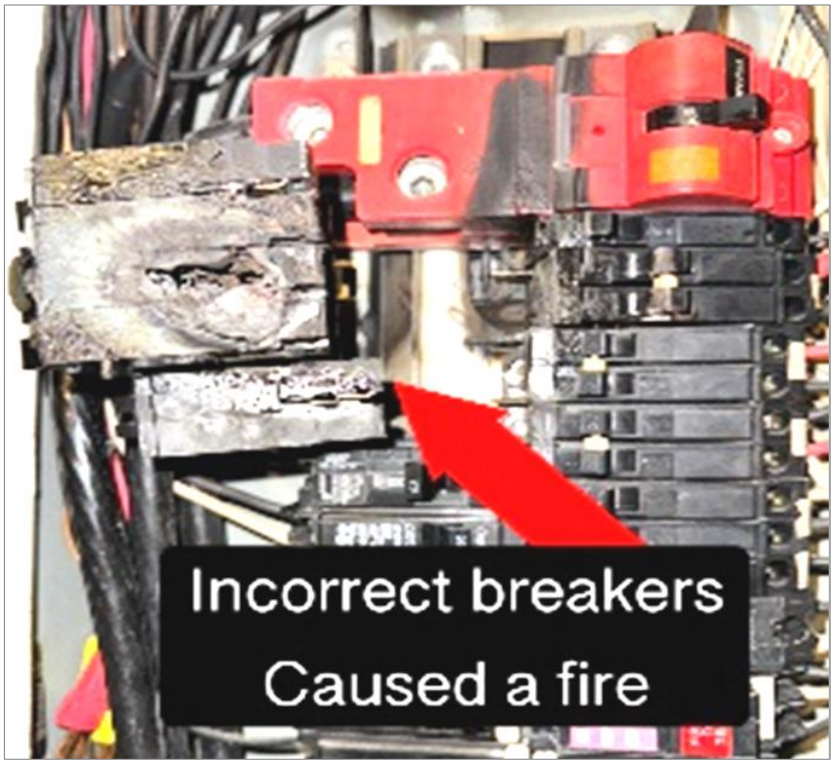
The building management declined that option because it was above their budget and requested installing higher-capacity breakers.

- The electrician advised against that because the breakers trip when they are overloaded.
- Management insisted that this was how the problem was to be solved.
- **The electrician yielded to the client and installed the higher-capacity breakers.**

After completing the job, the electrician was called back due to a lack of power in the building.

- **A fire in the breaker panel caused the power failure.**
- Building management agreed the solution is a new service panel and additional lines to carry the load.

**Burned Breakers**




## LESSONS LEARNED

A. The labor and materials to remove and replace the breaker panel, fix the fire damage, and add additional service lines amounted to approximately $15,000.

B. **If a customer requests work that the electrician knows will cause a dangerous situation or violate local building codes, they should refuse the work.**

C. Also, you should never replace breakers with a breaker that is not the proper load size. Breakers are meant to trip at a certain point to avoid this exact issue.

## DISCUSSION QUESTIONS

1. Do we know what size breakers are needed for the project? Are they available before selecting any replacements?
2. Is the requested work safe and within the local building codes?
3. If asked to do any work that is deemed unsafe, are we aware we must inform the foreman immediately before any work is started?

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# ELECTRICAL TRADE
# EXTENSION LADDER
# SAFETY TOOLBOX TALK

## OVERVIEW

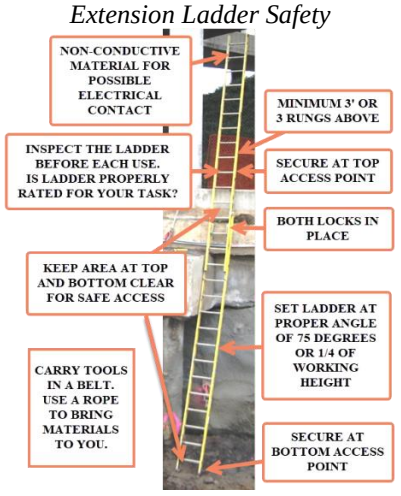
Extension ladders are a standard ladder used by most trades throughout the construction industry.

- Improper workplace use of ladders accounts for 25% of non-fatal falls and 33% of fatalities on our job site.
- It is essential for supervisors who oversee electrical workers to understand the Do's and Don'ts of step ladder safety to ensure that safe practices are being followed on-site.

## LEARN AND APPLY THE FOLLOWING

Electrical workers use extension ladders throughout their careers. They must know the risks and practice extension ladder safety precautions and proper safety setup procedures to avoid potential accidents.

*Extension Ladder Safety*




1. Electrical workers should ALWAYS use a non-conductive fiberglass extension ladder if there is potential exposure to an electrical hazard.
2. Know the maximum ladder load; this includes the weight of tools or equipment.
3. Before use, inspect the step ladder to ensure it is in good condition. Check for cracks, wet or slippery substances, secure rungs fitted on the stiles and not bent, extension guide brackets and rung locks are in place and secure, and no ladder shape distortions.
4. ALWAYS ensure an extension ladder is secured from accidental movement or tip-over.
   a) ALWAYS secure a ladder at the top. Use a ladder tie-off, anchor, clamps, rope, or tie wire as necessary. When you can, secure the ladder at the bottom.
   b) ALWAYS ensure the ladder extends three feet above the ladder-top access surface or a handhold is provided three feet above the ladder-top access surface.
   c) Verify the area where you set the extension ladder's base will not cause a trip or tip-over hazard and is level and free of obstacles and debris.
   d) When setting up an extension ladder on (1) concrete surfaces, consider using a non-slip ladder mat to create extra traction, or (2) on soft dirt, flip the feet upward so that the spiked edges are forced into the ground for added stability.
   e) Set the extension ladder at an angle with the base located one-fourth of the extension ladder's working length from the wall or vertical surface.
   f) Never lean a ladder against a window frame.
5. Wear proper footwear with good tread to prevent slipping, impact damage, punctures, or electrical hazards on the job site.
6. Ensure you are clear of any overhead protruding obstacles or electrical lines that could cause awkward reaching or unnecessary motions. Apply the "Belt Buckle Rule."
7. Maintain a 3-point contact: two hands and a foot or two feet and a hand while climbing or descending a ladder. ALWAYS firmly plant one foot on the ground before leaving the ladder. NEVER dismount a ladder too early.
8. Maintain a centered body position on the ladder to avoid tipping or tilting. This is important when using heavier tools that can throw off one's balance when shifted. Apply the Belt Buckle Rule: "The ladder user should keep their body positioned to keep their torso and belt buckle between the side rails of the ladder."
9. NEVER carry materials or tools in your hands while ascending/descending a ladder. Use a tool belt, hoist bucket, or hand line to transport material to the next level.
10. Consider an aerial platform or scaffold if working at height for an extended period.

## DISCUSSION QUESTIONS

A. What are some key takeaways for safely working on an extension ladder?

B. Are there General Contractor or Building owner-specific rules that apply to Electrical Trade–extension Ladder work above the OSHA Ladder standards?

C. Are aluminum ladders allowed?

| **Meeting Date:**<br>**Supervisor:**<br>**Employee Name:** |
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